CATALOGUE "C" 1917

Ambler Asbestos Corrugated Roofing

Ambler Asbestos Building Products

Made of

SHEET CONCRETE

Consisting of Hydraulic Cement Reinforced by Asbestos Fibre

COMPRISING

AMBLER ASBESTOS CORRUGATED ROOFING AND SIDING

AMBLER ASBESTOS BUILDING LUMBER

AND

AMBLER ASBESTOS SHINGLES (CENTURY BRAND)

The "Last Forever" Roofing Materials

Manufactured under

Hatschek's reissued United States Letters Patent No. 12,594

January 15, 1907, by the

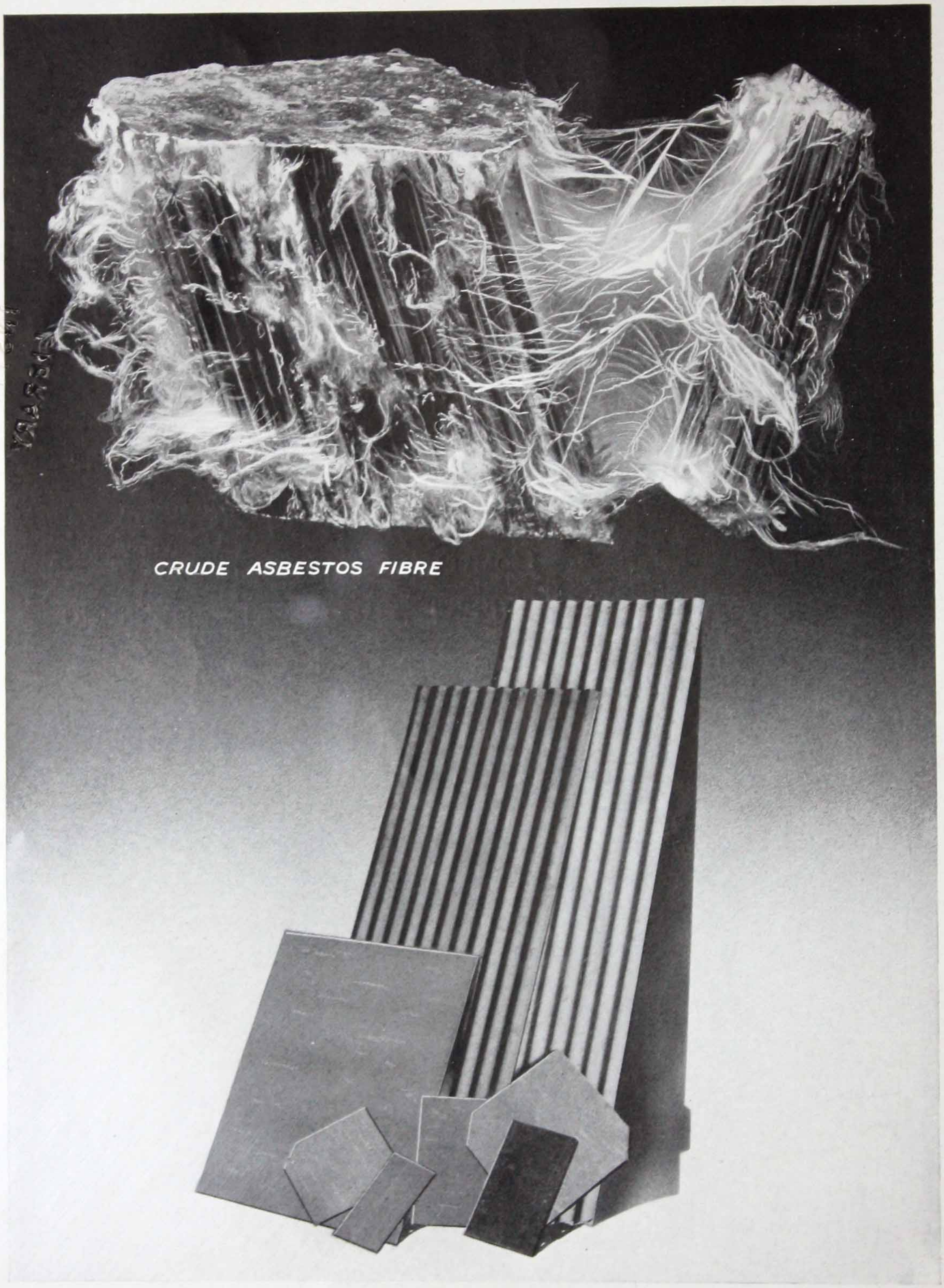
Asbestos Shingle, Slate & Sheathing Company

Factors

KEASBEY & MATTISON COMPANY

AMBLER, PENNA.

U. S. A.



CRUDE ASBESTOS FIBRE

From the Mineral Asbestos Fibre to the finished product—Ambler Asbestos Corrugated Roofing and Siding, Ambler Asbestos Building Lumber and Ambler Asbestos Shingles (Century Brand)
What the Ambler Asbestos Products are made of!

Selecting a Permanent Roofing and Siding Material

Large steel or wood frame buildings, such as machine shops, foundries, steel and iron works, gas works, elevators, chemical works, warehouses, pier sheds, and other industrial buildings should be covered with a material possessing to a marked degree

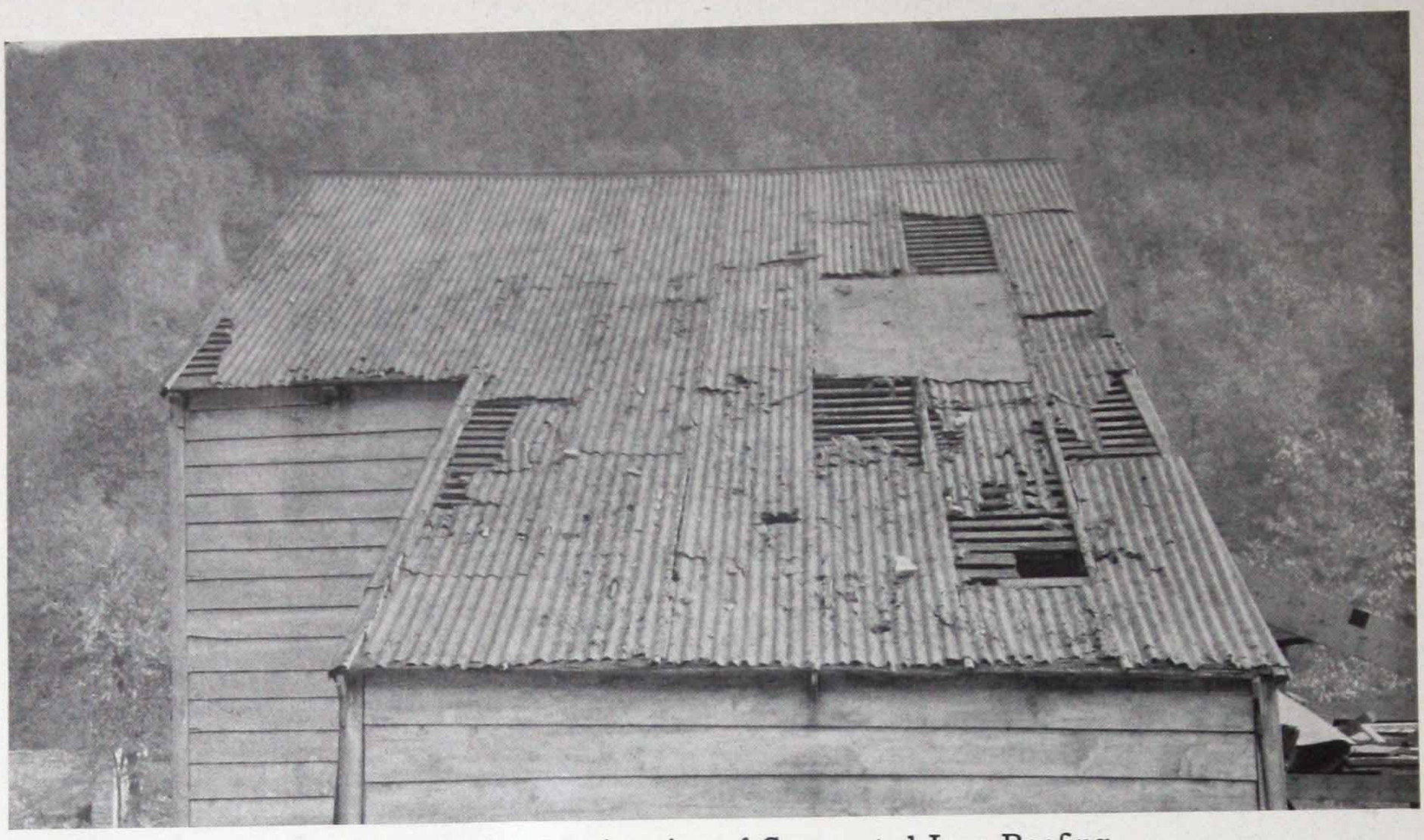
Comparative lightness,
Ease of application,
Weather- and fire-proof qualities,
Pleasing appearance, and
Permanence.

PERMANENCE, the ability to resist climatic conditions, air, water, fog, sun, frost and moisture throughout long periods of time is most important, and difficult to attain. Materials which rust, disintegrate, crack, curl, or wash off are not permanent, no matter how tough or water-proof they may appear when new. With the above in mind, let us examine some of the roofing materials in common use:

Corrugated iron when new is mechanically an ideal covering. It is water-, weather- and fire-proof, light, and easily attached to the structure, but it fails signally in permanency. No. 16 gauge iron, if unprotected, will, in most situations, rust out in less than five years. Iron can be painted, but the painting must be repeated every two years or so, and even then it is impossible to paint between laps and where the iron rests upon the supporting structure. Dust and dirt collecting in confined spaces retains moisture, which leads to the rapid rusting out of the roofing. Due to high heat conductivity, collection of moisture by condensation is frequent. If exposed to salt air or to sulphurous gases, as over blacksmiths' shops, foundries, and in many other industrial buildings, the useful life of iron is short.

Galvanized iron, when the galvanizing is properly done by dipping without subsequent removal of part of the zinc coating, has a longer life under favorable climatic conditions, but the best dipped galvanized iron will not stand a mill atmosphere, as chemical impurities in the atmosphere quickly corrode the metal, while, moreover, under modern competitive conditions, it is not only difficult to obtain sheets having a sufficient coating, but to avoid the substitution of galvanized steel sheets when the specifications call for iron.

The failure of corrugated iron and steel, both painted and galvanized, has led to a trial of other coatings, such as asphalt and various coal tar products. However, continuous exposure in thin layers to air, moisture and sunlight is a severe test for any and all hydrocarbon compounds. These materials are highly complex in their nature, their original fluidity being due to the presence of volatile constituents which act as a "vehicle" or solvent for the more stable and harder compounds. As soon as these volatile elements are removed, the elastic-

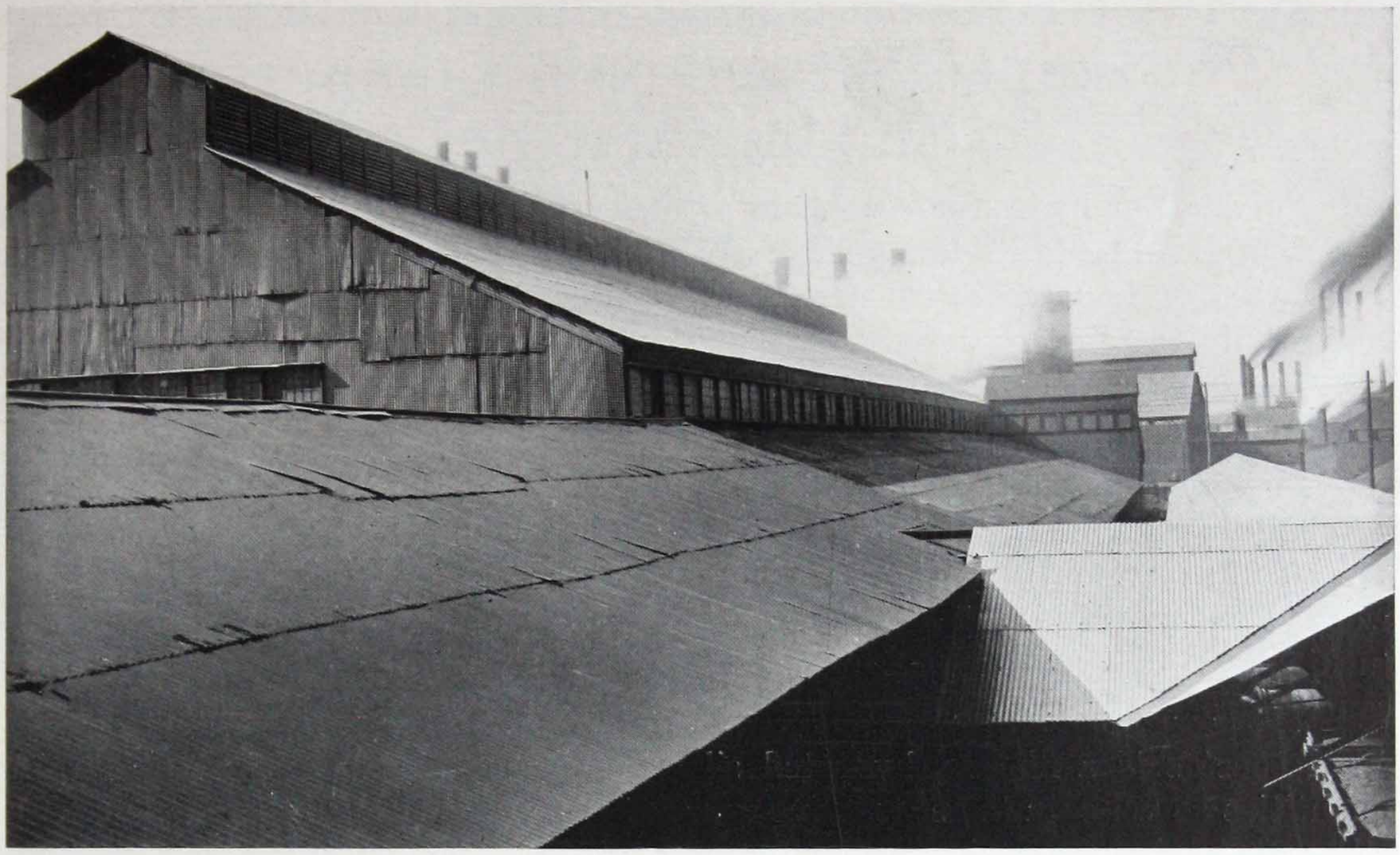


Illustrating the deterioration of Corrugated Iron Roofing

ity of asphalt or tar is lost. When exposed continually to air and sunlight, these volatile constituents evaporate and the chemical nature of the complex hydrocarbons undergoes a slow but progressive change, so that the coating becomes hard and brittle, dries up and contracts, producing hair lines, cracks, and ultimately blistering or curling up and separating completely from the metal, thus allowing rust and consequent destruction to occur. To prevent this result it has been attempted to protect the gummy coating by means of layers of woolen or Asbestos felt, or similar material applied to or partly imbedded in the surface coating. Such materials, however, not only disintegrate and wash away, but are porous and cannot permanently prevent the destructive processes above described.

Moreover, as these coatings have a coefficient of expansion different from that of the metal, and as the asphalt or tar softens under the intense heat of the noonday sun, there is a tendency for the material to draw or slide upon the surface of the iron, just as paint shrinks and peels off from corrugated iron. This effect, in exaggerated form, may be observed where compound coverings made up of several layers of woolen felt with tar or asphaltic binders are exposed on walls directly to the sun. The outermost layer of felt will frequently be found to have torn loose from the fastenings and to have contracted several inches from the edges of the original sheet. An examination of the hard, weather-beaten surface will suggest that this shrinkage of the superficial layer has probably been due to permanent reduction in volume of the tarry substances, due to changes in chemical composition and to the escape of the more volatile constituents of the hydrocarbon coating.

Where prepared roofing materials are applied on wooden roof boards or sheathing, the hydrocarbon compounds and oil of the roofing material, under the



Comparison of Corrugated Iron, as seen on gable end and roof to left, with Ambler Asbestos Corrugated Roofing shown on main foundry roof in background and the runs at right foregound

influence of a hot summer sun, soak into the wood and render it highly inflammable, the wood often becoming black from absorbed oils. This action also impoverishes the durability and water-proofing qualities of the roofing material, which is further disintegrated in many cases by absorption of resinous material from the wood.

In tar and gravel roofs, the gravel, if properly applied, acts as a more or less complete seal, shutting off the air from contact with the tar or asphalt, and thus greatly extending the usual life of the latter. Roofs of this material, however, are not altogether incombustible and are not generally adapted for the types of steel and wood frame buildings under discussion.

Tiles and slates are incombustible but are expensive of application, need frequent repairs for cracked slates or broken tile, and, because of their weight, greatly increase the cost of the structure. Applied to high buildings, they constitute a real menace to the safety of persons.

Efforts recently made to render wooden shingles, and fibrous materials generally, weather and fire resistant have largely failed, as may more readily be seen now that a few years have elapsed since the introduction of such processes. Treated shingles check, warp and decay, forming highly combustible material. Wood or fiber products treated with chlorinated naphthaline acquire after exposure to the elements a furred or moss-like surface which is highly inflammable and moreover the chemical often crystalizes out in irregular and unsightly blotches or patches.

Ambler Asbestos Reinforced Concrete—The Permanent and Non-Combustible Building Material

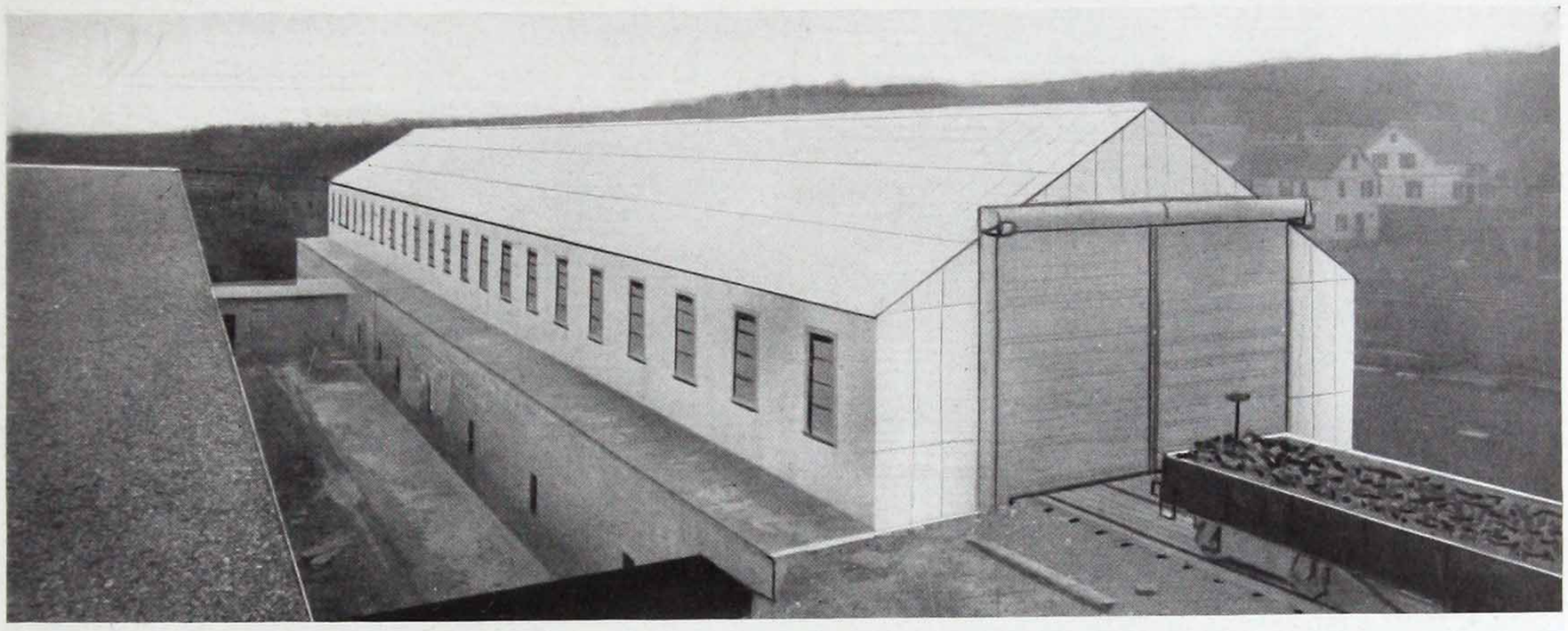
Portland or hydraulic cement is permanent, insoluble and weather and fire resisting, but due to its low tensile strength it has been widely used only when reinforced or in massive construction. Layers, sheets or plates of cement must necessarily be reinforced, but metallic reinforcement is not practicable for thin sheets, as water and air will somewhere come in contact with and corrode the iron or steel.

In seeking to adapt hydraulic cement to the formation of light sheets or slabs for building purposes, Ludwig Hatschek, an Austrian asbestos worker, hit upon the idea of using asbestos fiber as the reinforcing material. His patents are now worked extensively in all civilized countries, the Hatschek plants in Austria alone turning out each year more than one hundred million square feet of this asbestos concrete roofing material.

Asbestos is a fibrous, hydrated silicate of magnesia, found in considerable quantities as veins in the serpentine rocks of the Province of Quebec and in some other mountainous districts. The better qualities, as found at Thetford, P. Q., are exceedingly fine, tough and flexible, and have a tensile strength of about 25 tons per square inch. A beautiful representation of the finest quality as it comes from the mines is shown on page 2.

Applying Ambler Asbestos Corrugated Roofing on Steel Structure

In order to develop the greatest reinforcing action from asbestos in cement sheets, the fibers must be uniformly distributed; that is, not bunched, should point in all directions, and each individual fiber should be in contact over its entire surface with the hydraulic cement colloids, which then become perfectly and uniformly hydrated. The following paragraphs describe how these results are secured in the manufacture of **Ambler Asbestos Building Products.**



Sand Bins—The Draper Company, Hopedale, Mass.
Covered with Ambler Asbestos Corrugated Roofing and Siding.

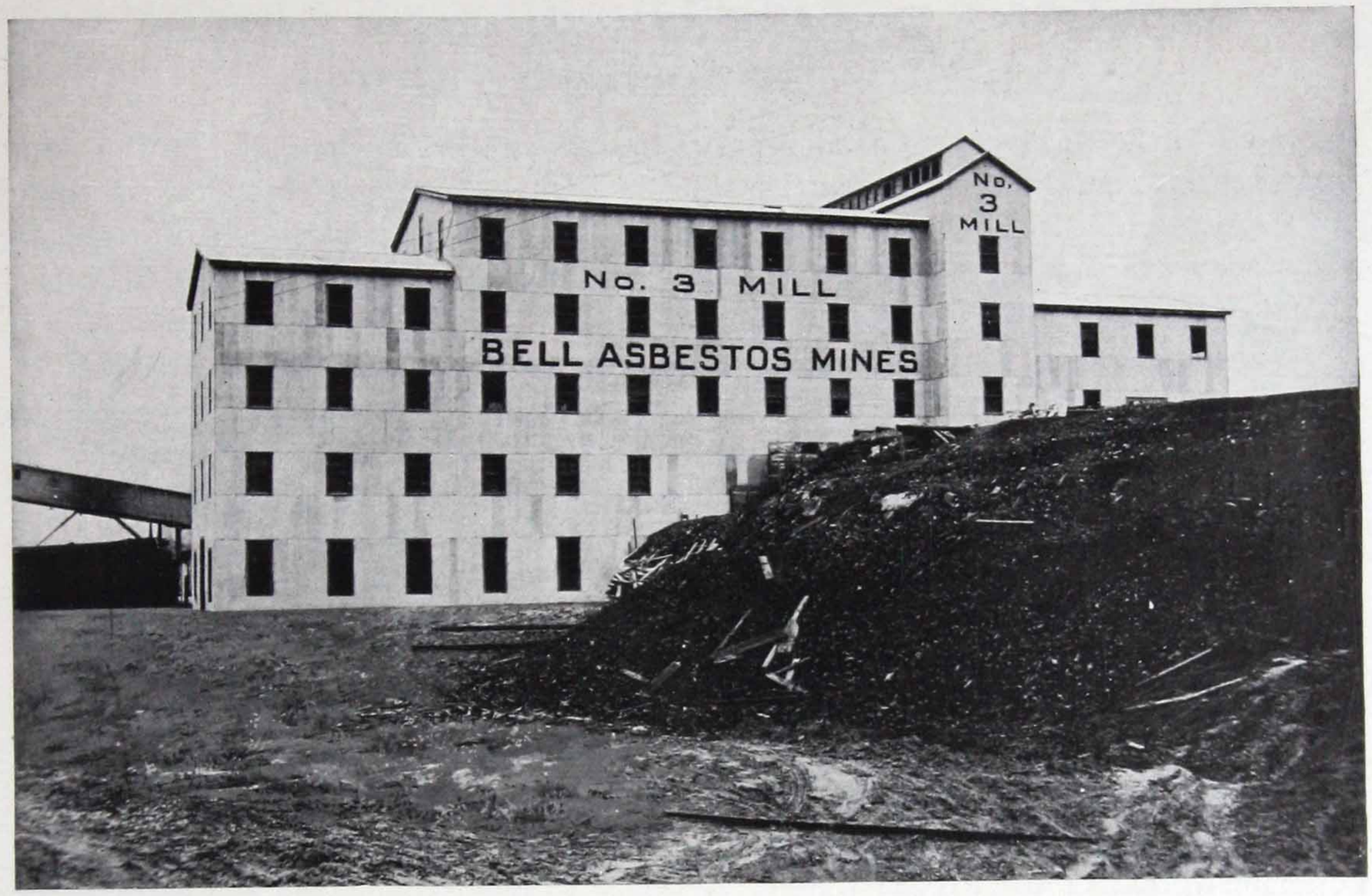
Process of Manufacture Used at Ambler

Hatschek's method for incorporating the asbestos reinforcement is the important feature of this process. The ordinary method of mixing the material dry and adding water afterward does not give the desired results, as the immediate effect of a small amount of water is, by the action of surface tension, to draw the asbestos aggregate and the cement particles together into groups or balls. The cement is thus prevented from reaching all the fibers and the cement particles themselves become coated and compacted into small masses, excluding all but a very small percentage of water from between the particles, while a highly supersaturated gelatinous layer is formed of the more accessible portions of the cement on the outside. The imperfectly wetted mixture therefore comes to consist mainly of unhydrated cement bound together by a net work of more perfectly hydrated cement "gels." As stated by Mr. Nathan C. Johnson, the cement expert, mixing with a limited amount of water produces a "colloidal boundary," which, entirely surrounding such masses, operates to prevent further hydration by reason of its constituting an impervious envelope or skin through which water cannot pass. The close grouping thus produced admits of the presence of only a small quantity of water between the particles, far too little to satisfy the chemical and physical requirements of the cement, and further water attack is prevented by the colloid envelope.

Shenango Furnace Company, Sharpsville, Pa.
Ambler Asbestos Corrugated Roofing Applied on Steel Roof Trusses

The difficulties just described are effectively overcome in Hatschek's process as carried out at Ambler. Hydraulic cement of a high and uniform grade is first thoroughly mixed with water and asbestos fiber of the chrysotile variety, in a beating engine similar to that employed in the manufacture of paper pulp. The prolonged, vigorous mixing and agitation to which the materials are here subjected results in the formation of a uniform pulp, having the properties of a colloidal diffusion. One of these properties is that the small, solid particles will remain in suspension more or less indefinitely. The hydraulic cement of the mixture seems to swell up, taking the appearance of a colloidal, soft, gluey or pastelike mass, which can undergo the subsequent working on a millboard machine without setting or hardening. There is no separation of the cement, even when the material is finally subjected to very high pressure, at which time only clear water escapes.

From the beating engine the material passes directly to the vat of a modified millboard or paper machine, where it is kept in a state of agitation until picked up by a fine wire screen mounted on a rotating cylinder, from which it is passed by an endless felt belt to a second rotating cylinder upon which the thin layers accumulate to the desired thickness. Due to the numerous layers of which a sheet is thus formed, the asbestos fibers cross each other in all directions but mainly in planes parallel with the sheet, giving a texture of great homogeneity and toughness.



Mill No. 3—Bell Asbestos Mines. Thetford Mines, P. Q., Canada.

For complete fire protection, this great Mill and all the other buildings are covered with Ambler Asbestos Corrugated Roofing. Roofs, sides, gables, etc. Fire originating in one of the buildings was confined to this building and all the other mining buildings saved by the use of Ambler Asbestos Corrugated Sheathing.

The material is then cut across and removed in the form of sheets, which are piled one upon another and placed between a pair of metallic plates, after which they are subjected to great pressure while the hydraulic cement is still in a collodial condition, thus firmly cementing each fiber of asbestos with the cement colloids and forming a homogeneous sheet which cannot subsequently be split apart.

In the manufacture of Ambler Asbestos Corrugated Roofing and Siding, these metallic plates are corrugated, and, with the asbestos sheets, are placed between heavy press plates and subjected to a pressure of twenty tons or more to the foot, thus compacting them to such an extent as largely to eliminate the minute voids common to concrete as ordinarily made. The resulting product is so water resisting and so thoroughly practical as the perfection of concrete roofing material as to render it the preferred roofing upon the largest engineering structures. After compression the material is stored in a damp room to prevent drying out of the surface until thoroughly set, after which it is well seasoned. In the manufacture of Asbestos Building Lumber which is supplied in the form of flat sheets of varying thickness, the compacting operation is carried out between flat plates on powerful hydraulic presses.

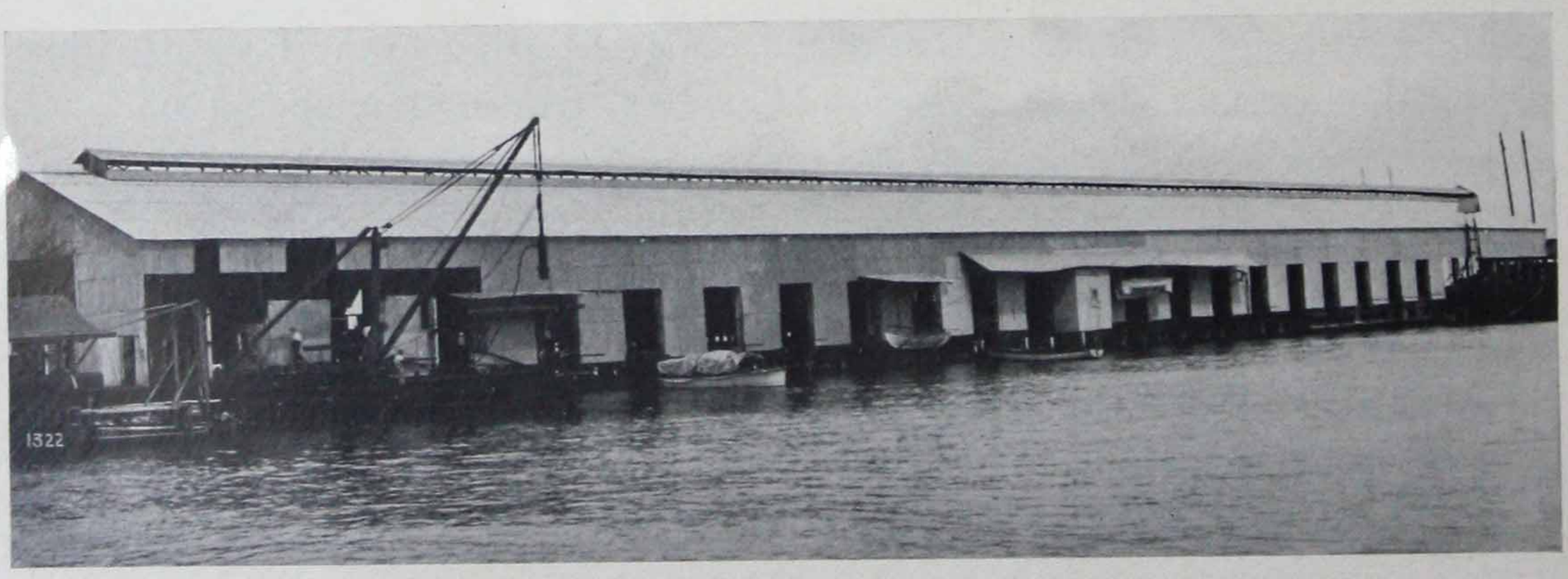
Weather Resisting Qualities of Ambler Asbestos Building Products

Due to the progressive hardening of the hydraulic cement colloids, the Ambler Asbestos Building Products become tougher, denser and stronger with age As there is nothing to dry out, evaporate, blister, crack, peel, wash off or corrode, they are perfect weather resistants, and have truly been said to form the "Last Forever" roof.

No impregnation or additional means of hardening or covering are required. Due to the great density, the amount of water absorbed is exceedingly small and grows smaller with age, hence the material is not affected by frost. At the same time it is not brittle and does not fracture, chip or split into layers, but can readily be sawed, filed, drilled or cut, and nails can be driven through it without fracture.

Ambler Asbestos Building Products as Fire Protection

The annual fire loss in the United States is, according to the United States Geological Survey, $5.34 per capita. In Europe it is only $1.05, although it is generally acknowledged that the fire prevention service in the United States is superior to that of any other country. At least 27 per cent. of the fire loss of the United States is due to fires that extend beyond the buildings in which they originate, and the losses on wooden buildings are over two and a half times as great as those on buildings constructed partially or wholly of non-combustible materials.



Pier—United Fruit Co., Port Limon, Costa Rica
Covered with Ambler Asbestos Corrugated Roofing and Siding

In other words, if all buildings in the United States were constructed of Ambler Asbestos Building Products, which do not take fire nor communicate fire to adjoining buildings, the fire loss would be reduced nearly one-third, and if in addition ceilings, walls, partitions, shelves, wire conduits, elevator shaft linings, etc., were constructed of the same non-combustible materials, the annual loss from fire would very likely be reduced to less than one-third its present amount.

Ambler Asbestos Building Products Stop Fires

Ambler Asbestos Building Products, including Ambler Asbestos Corrugated Roofing and Siding, Ambler Asbestos Building Lumber and Ambler Asbestos Century Shingles, are non-inflammable and cannot carry nor support fire. Iron is a fire-communicating material when heated above the moderate temperature of 1500 degrees F., while Ambler Asbestos Building Products afford a relatively high degree of insulation against heat. They will not take nor retain fire and will withstand a high degree of heat on one side before communicating fire to inflammable materials on the other.

Ambler Asbestos Building Products will successfully withstand higher temperatures than will the lime mortar of an ordinary brick wall. Buildings covered with Ambler Asbestos Building Products are protected against flying brands and radiation from other buildings, and buildings so covered can secure substantial reductions in fire insurance rates, as compared with buildings covered with inflammable or semi-inflammable or heat-conducting roof coverings. Due to their light weight and manner of application, Ambler Asbestos Corrugated Roofing and Siding, and Ambler Asbestos Century Shingles require little or no change in methods of construction over those required for corrugated iron or wooden shingles.

Ambler Asbestos Building Products have been tested and approved as fire retarding materials by the American Society for Fire Prevention.

Illustrating the menace of the wood shingle roof and the remarkable resistance to the spread of fire presented by the Ambler Asbestos Shingles (Century Brand)

The first three of these stores were roofed with wooden shingles. The conflagration was only checked when it came to the Ambler Asbestos Shingle (Century Brand) roof at the corner, and the building on the opposite corner was unharmed.

Buildings Covered with Ambler Asbestos Products are Easily Heated

The fact that cement and asbestos are good heat insulators, together with the air-tightness and uniformly snug joints secured with Ambler Asbestos Corrugated Roofing and Siding, render buildings covered with the latter much more easily heated than are buildings covered with metal or with the various sorts of covering having numerous joints A considerable economy of fuel is thus made possible. Conversely, such buildings are cooler in summer.

Economy of Ambler Asbestos Corrugated Roofing and Siding

The lightness of corrugated iron and the ease with which it may be applied has led to its general use on steel and wood frame buildings. However, its lack of resistance to ordinary atmospheric influences and its exceedingly rapid disintegration unless protected or where salt air or sulphurous fumes are encountered compel users of this material to keep gangs of roofers constantly employed at painting and making repairs and replacements.

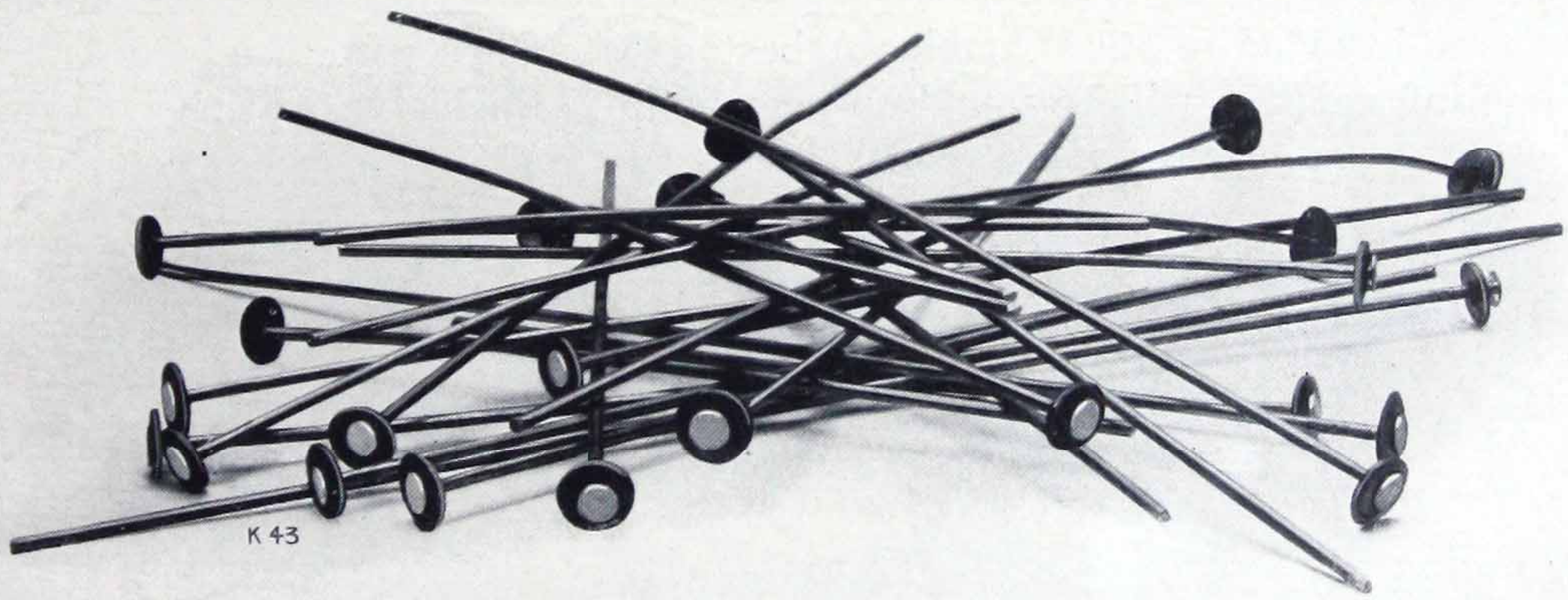
As the life of corrugated iron, even with the best of attention, is only a few years, the first cost is far from being the only cost; in fact, in many cases the total cost is equivalent to putting on a new roof every ten years or less, in addition to which there is usually a heavy charge to be made for interference with work or processes, or for damage to goods. We have frequently had reports of corrugated iron roofs which, although painted, have required renewal every five years. The first cost of corrugated iron is, by no means, the last cost. The cost of periodical painting must be taken into consideration, and that means that your corrugated iron c o s t s more—frequently a great deal more than Ambler Asbestos Corrugated Roofing, including even application and any extra purlins that may be necessary.

Reduction Building—Central Mfg. Co., Lockland, Ohio Covered with Ambler Asbestos Corrugated Roofing and Siding

Application of Ambler Asbestos Corrugated Roofing and Siding

Ambler Asbestos Corrugated Roofing and Siding material is permanent as affected by climatic conditions, thus possessing great advantages for elevators, steel works, machine shops, foundries, gas works, warehouses, pier sheds and other similar structures. It is supplied in the form of sheets measuring 27½ inches wide and 4, 5, 6, 7, 8, 9, and 10 feet long. In each sheet there are eleven complete corrugations of 2½-inch pitch and 1-inch depth from top to bottom. The material varies from 3/16 to 5/16 inch thick, and weighs from 2.8 to 3 pounds per square foot.

This weight is about the same as that of No. 14 to 15 gauge corrugated iron, and it is supported on iron or wooden purlins, in much the same manner as corrugated iron. For roofing, the purlins should be spaced not more than 30 to 36 inches apart, for which reason the 6- and 9-foot lengths work out most conveniently. The slope of the roof should be at least one-quarter; that is, 6 inches rise in each foot, and the sheets should be lapped two corrugations endwise and 6 inches at the ends.



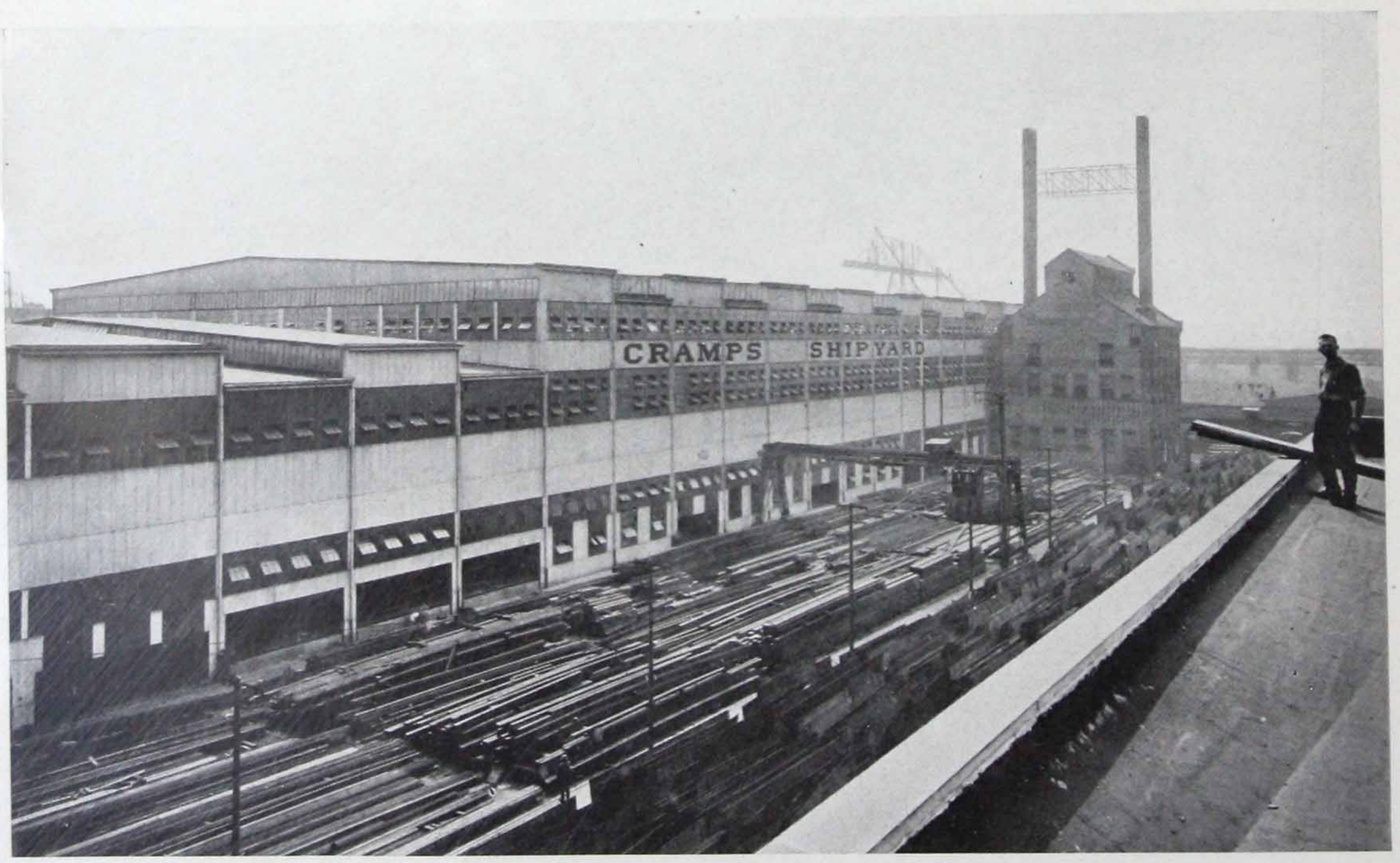
Ambler Aluminum Wire Fasteners with Lead Washers
Used for Attaching Ambler Asbestos Corrugated Roofing and Siding to Iron or Steel Purlins

FASTENINGS.—The preferred manner of securing the material to the purlins is by means of aluminum tie wires provided with heads like wire nails and 1-inch lead washers. Holes are drilled through the corrugated material just above and just below the edges of the purlins and in the ridge, not the valley of the corrugation. A separate aluminum tie wire is passed through each of these holes, the heads and lead washers being first well buttered with Ambler Asbestos Slaters' Cement and the inner ends are then twisted lightly together under the purlin. For application to wooden structures, ordinary iron wire nails can be driven directly through the material into the wooden supporting members of the roof. The sheets of each succeeding course are staggered from the sheets in the course below by the width of the side overlap, that is two corrugations, thus avoiding any opening or vacant space in the end overlap.

EXPANSION JOINTS.—As with all solid sheet coverings, expansion joints must be provided in long runs, which is easily done by several methods, as for instance, by putting in an extra sheet all the way down the roof with four or five corrugations extra lap, which are not tightly fastened.

ENGINEERING AND INSPECTION SERVICE.—In order to give full satisfaction, Ambler Asbestos Corrugated Roofing and Siding should be properly applied and supported. The cost of such proper support and application is about the same as for corrugated iron and other similar coverings. To insure complete satisfaction, we have instituted at our Main Office a free engineering and inspection service. This assistance is available to all purchasers or intending purchasers of Ambler Asbestos Building Products, not only for inspecting installations, but also for passing upon drawings and making suggestions while designs for buildings are still in course of preparation. We also suggest that architects, engineers and draftsmen working upon designs for buildings of this character should consult our "Ambler Asbestos Engineers' Data Sheets," copies of which will gladly be sent upon application.

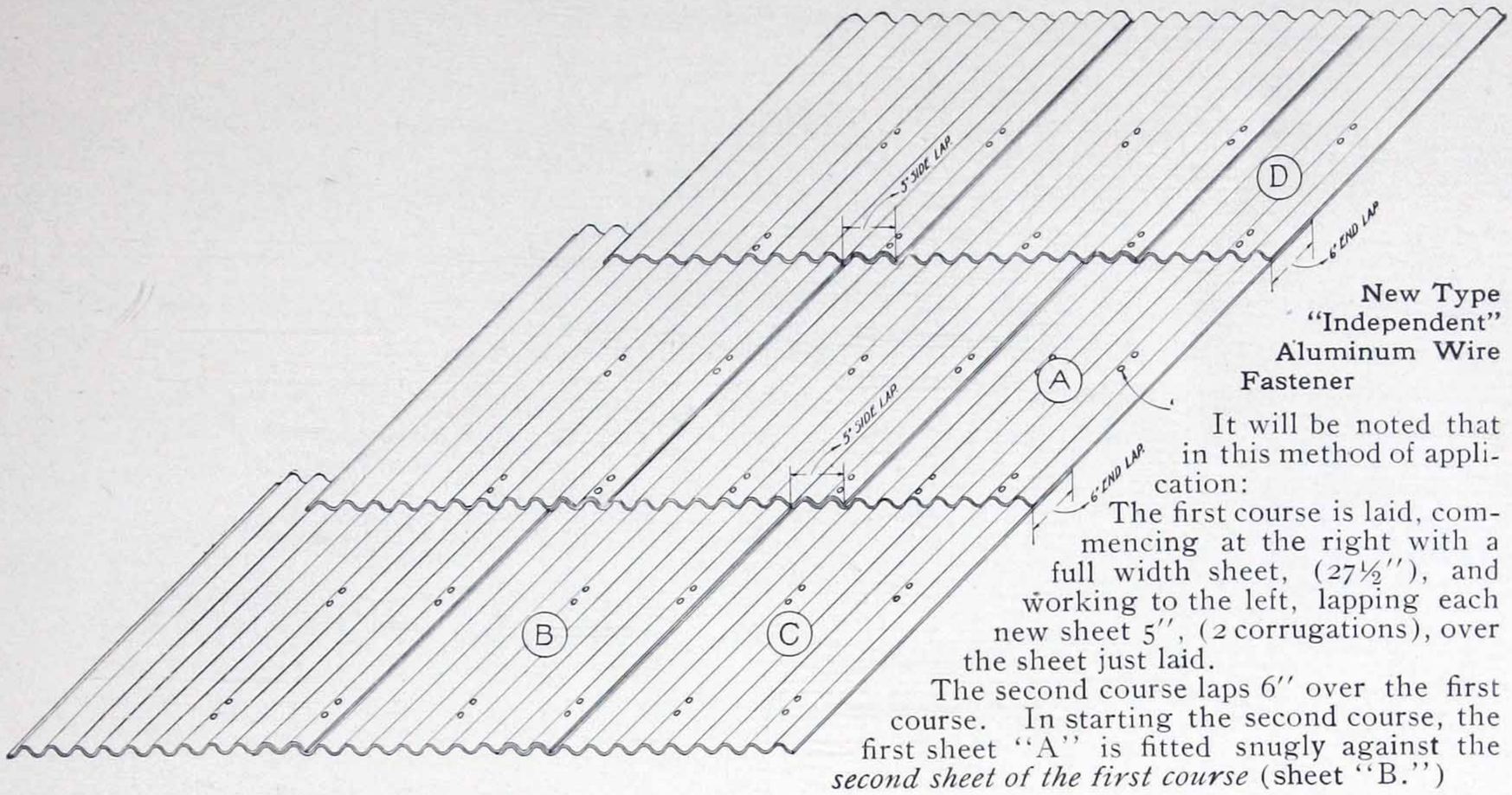
SUPPORTING STRUCTURE.—For convenience in estimating the roof trusses for supporting Ambler Asbestos Corrugated Roofing, diagrams and tables were inserted in our "Ambler Asbestos Data Sheets for Engineers." The complete information will be found on pages 2 to 27, inclusive, of that booklet.



A section of one of the many large buildings at Cramp's Shipyard, Philadelphia, Pa.
Covered with Ambler Asbestos Corrugated Roofing and Siding

Method of Laying Asbestos Corrugated Sheathing

NOTICE. By staggering joints as shown a perfectly tight roof is secured



New Type "Independent" Aluminum Wire Fastener

It will be noted that in this method of application:

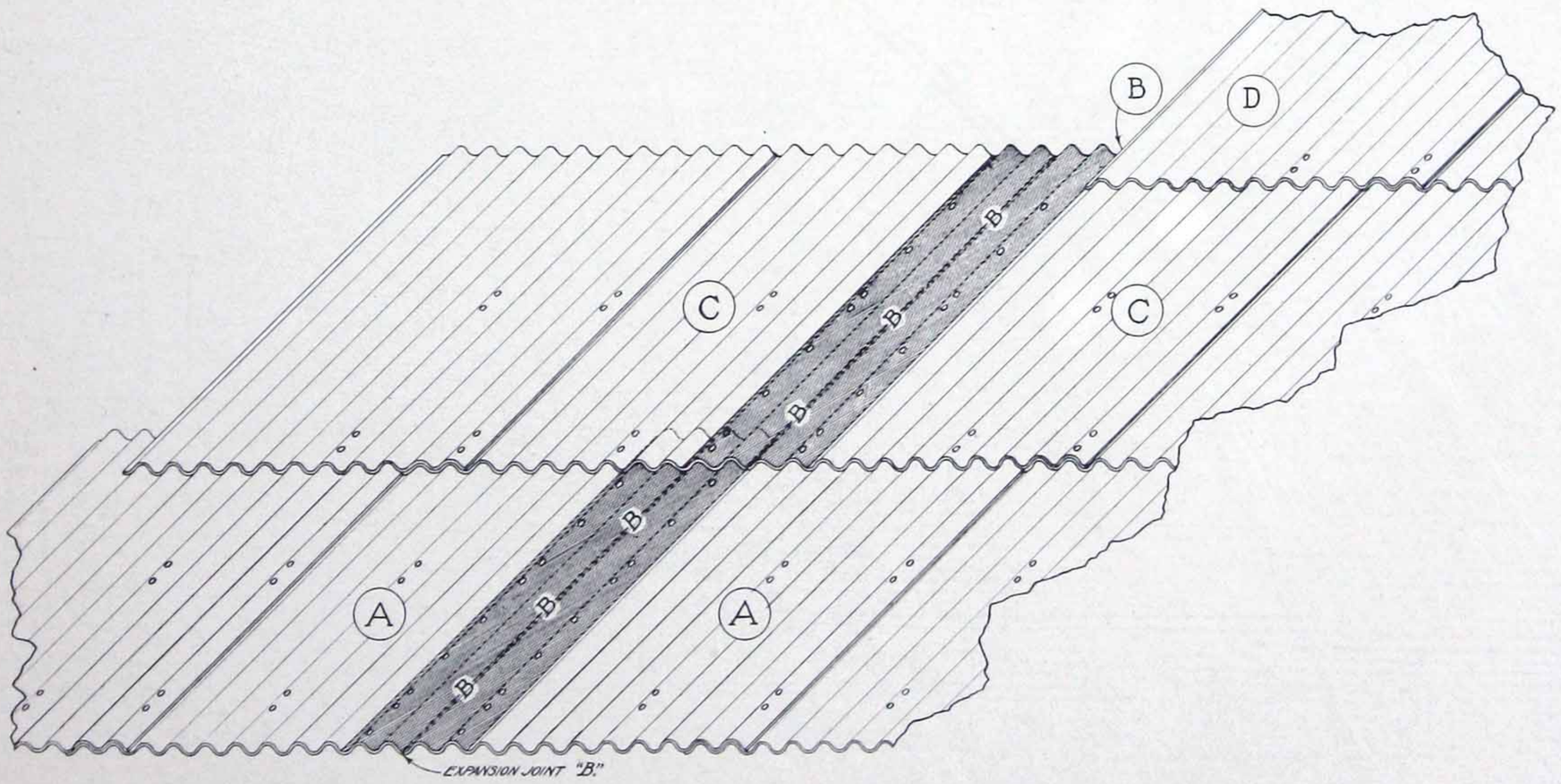
The first course is laid, commencing at the right with a full width sheet, (27½"), and working to the left, lapping each new sheet 5", (2 corrugations), over the sheet just laid.

The second course laps 6" over the first course. In starting the second course, the first sheet "A" is fitted snugly against the *second sheet of the first course* (sheet "B.")

Then work across the roof to the left, as before.—This will leave sheet "A" projecting 5" (2 corrugations) further beyond the end of the roof than sheet "C."—This 5" piece must, of course, be cut off.

On the third course the first sheet will project 10" (4 corrugations). This of course is cut off also (See sheet "D").

On the fourth course, the first sheet will project 15" (6 corrugations). This of course must be cut off, and so on.



One method of providing expansion joints in roofs of considerable lengths when covered with Ambler Asbestos Corrugated Sheathing

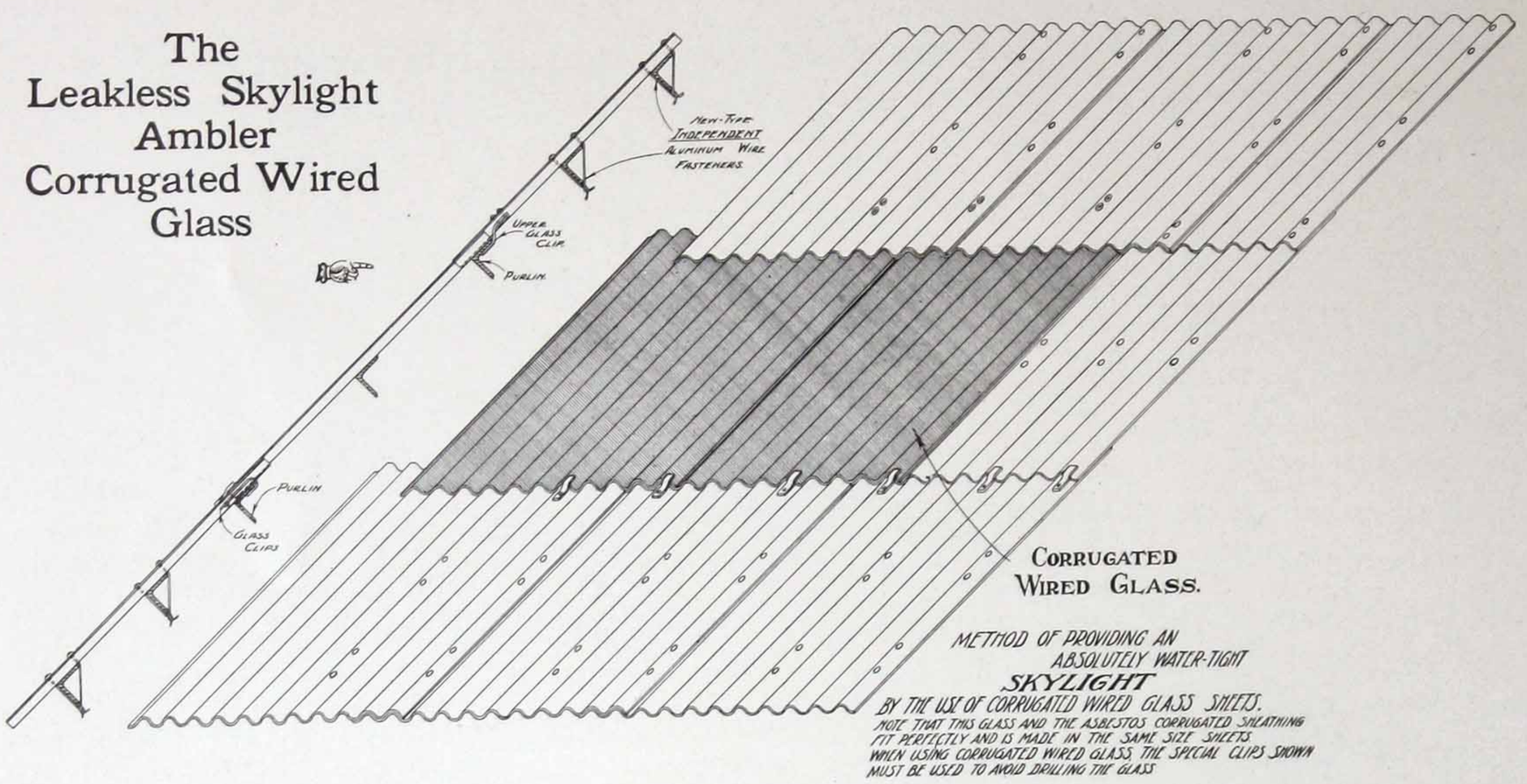
Sheets "A" meet, but do not lap.

Sheets "C" meet, but do not lap (likewise sheets "D").

Sheets "A"–"C"–"D" should be wired down rather loosely, thus allowing them to buckle up slightly at the joint "B" to compensate for expansion.

The open joint "B" (as each two sheets next to the joint are laid) is covered with a sheet of lead flashing about 12" wide, rubbed down into the corrugations of the Ambler Asbestos Corrugated Sheathing.

The
Leakless Skylight
Ambler
Corrugated Wired
Glass



Ambler Corrugated Wired Glass for Skylights. $2\frac{1}{2}''$ Corrugations; $27\frac{1}{2}''$ wide.
Lengths 4, 6 and 8 feet, price 50c. per square foot.

Illustrating Ambler Corrugated Skylights of curved wired glass enmeshed with the sheets of Ambler Asbestos Corrugated Roofing. The simplest, cheapest and best skylight possible.

Ambler Asbestos Corrugated Roofing

Not Crated

Price per Square Foot F. O. B. Works

Asbestos Corrugated Sheathing, Newport Gray Color, 2½″ Corrugations, 27½″ wide.....18c. sq. foot.
Ambler Corrugated Wired Glass for Skylights, 50c. per square foot.

Adjustable Pitch Winged Ridge Roll

Adjustable Pitch Winged Ridge Roll, with 6″ wing, made up in ½ sections, adjustable for any pitch of roof.....30c. per lineal foot, net.

Actual square foot area for various stock size sheets of Ambler Asbestos Corrugated Roofing or Sheathing, based on a factor of 2.2917 square feet per lineal foot of material:

1 sheet 4 ft.	9.1666 sq. ft.	1 sheet 8 ft.	18.3333 sq. ft.
1 sheet 5 ft.	11.4583 sq. ft.	1 sheet 9 ft.	20.6249 sq. ft.
1 sheet 6 ft.	13.7500 sq. ft.	1 sheet 10 ft	22.9166 sq. ft.
1 sheet 7 ft.	16.0416 sq. ft.		

Ambler Asbestos Corrugated Roofing

In Crates

(The Cost of Crates Averages from $1.00 to $1.25)

Number Sheets per Crate	Size of Sheets	Weight in lbs.		Measurement in cu. ft.
		Gross	Net	
20	27½″ x 48″ x 3/16″	590	550	10.388
20	27½″ x 60″ x 3/16″	630	575	12.987
16	27½″ x 72″ x 3/16″	690	625	12.750
14	27½″ x 84″ x 3/16″	700	630	14.875
12	27½″ x 96″ x 3/16″	700	620	15.111
10	27½″ x 108″ x 3/16″	690	600	14.875
10	27½″ x 120″ x 3/16″	740	635	16.527

Sundries

Aluminum Wire Fasteners, made of No. 8 gauge wire with convex lead head,

8½″	per hundred $ .90	12″	per hundred $1.20
10″	per hundred 1.00	14″	per hundred 1.30

Lead Washers, 1″ diameter, flat, for use with tie-wire fastenings, per thousand..... $2.00
Lead Washers, cup-shape, for use with nails for wooden purlins or sheathing (264 to the pound) per pound..... .20
Aluminum Rivets for riveting side laps in between purlin fastenings,
3/16″ diameter x ¾″ long (375 to the pound) per pound.....
3/16″ diameter x 1″ long (330 to the pound) per pound.....
3/16″ diameter x 1¼″ long (260 to the pound) per pound.....
Aluminum Washers for above (400 to the pound) per pound.....
} Net prices on application. Can be estimated at about $2.00 per pound.

A few of the many large and conservative concerns using Ambler Asbestos Corrugated Roofing and Siding

American Agricultural Chemical Co., Crocker Plant, Buffalo, N. Y.
(Roof and sides of cinder elevator house.)

American Bridge Co., Shiffler Plant, Pittsburgh, Pa.
(Shed outside electric furnace.)

American Locomotive Co., Richmond, Va.
(Shields underneath roof.)

Appalachian Power Co., Maybeury, Va.

Arlington Co., Arlington, N. J.
(Drying vaults and drying room and small building.)

Armour Co., East St. Louis, Ill.
(Plant.)

Atlantic Refining Co., 3144 Passyunk Avenue, Philadelphia, Pa.
(Oil storage.)

Atlas Powder Co. (Dupont).

Bethlehem Steel Co., South Bethlehem, Pa.
(Preheating furnace building.)

Blau Gas Co., Long Island City, N. Y.
(Plant.)

Buffalo Gas Co., Buffalo, N. Y.

By-Products Coke Corporation, Solvay, Ill.

J. I. Case Threshing Machine Co., Racine, Wis.
(Loading shed.)

Central R. R. of New Jersey, Jersey City, N. J.
(Coaling station, Communipaw engine terminal.)

Charlotte Harbor and Northern R. R. Co., American Agricultural Chemical Co., South Boca Grande, Fla.
(Phosphate rock storage bin.)

City of Minneapolis, Minneapolis, Minn.
(Rest house, City Hospital.)

Wm. Cramp & Son Ship and Engine Building Co., Philadelphia, Pa.

Cudahy Packing Co., Wichita, Kans.

Dexter Portland Cement Co., Nazareth, Pa.
(Stone crushing and storage building crusher house and dryer shed.)

Diamond Rubber Co., Akron, Ohio.

Electro Smelting and Aluminum Co., Lockport, N. Y.
(Furnace shed.)

Federal Sugar Refining Co., North Yonkers, N. Y.
(Roof and sides of tank house.)

B. F. Goodrich, South Akron, Ohio.
(Factory.)

Grasselli Chemical Co., Grasselli, N. J.

Harbison-Walker Refractories Co., East Chicago, Ind.

International Railways Co., Porto Barrios and Salvador, C. A.

LaBelle Iron Works, Steubenville, Ohio.
(Blast furnace.)

Lehigh Portland Cement Co., Mason City, Ia., and Ormrod, Pa.
(Locomotive house and store house.)

Lemp Brewing Co., St. Louis, Mo.

Libbey Glass Co., Toledo, Ohio.

Mississippi Glass Co., St. Louis, Mo.
(Plant.)

N. Y. Central and H. R. R. Co., Grand Central Terminal, N. Y.
(Naphtha cellæ, screen house and addition to percolation building.)

Park Theater, Atlantic City, N. J.

People's Gas Light and Coke Co. Building, at Crosby and Hobbie Streets, Chicago, Ill.

Porto Rico Gas Co., Porto Rico, San Juan.
(Retort house and boiler room.)

Purington Paving Brick Co., Galesburg, Ill.

Semet-Solvay Co., Ensley and Holt, Ala.
(Ammonium sulphate plant.)

Solvay Process Co., Detroit, Mich., and Solvay, N. Y.

Spencer Wire Co., Worcester, Mass.
(Roofing mill.)

Standard Oil Co., Richmond, Cal.
(For use at various points.)

Susquehanna Coal Co., Wilkes-Barre, Pa.

Terminal Warehouse Co. of R. I., South Providence, R. I.
(Side walls of pier shed.)

United Fruit Co., Swan Island, Porto Barrios, Santa Marta and Port Lima.
(Engine house, hospital, operators' house, radio station, piers, blacksmith shops, etc.)

United Gas Improvement Co., Allentown, Pa., and Hartford, Conn.
(Retort house.)

Vacuum Oil Co., Olean, N. Y.
(Acid buildings.)

Washington University, Seventh and Spruce Streets, Philadelphia, Pa.

Watkins Coal Co., Hastings, Pa.
(Engine house.)

—and hundreds of others.

United States Government Installations of Ambler Asbestos Corrugated Roofing and Siding

For:

Horse barn.
Tool shed.
Cattle barn.
Feed house for hogs.
Lighthouse establishment.
Oil house (siding and roofing).
Coal shed.
Lighthouse depot.
Building.
Coal handling plant.
Foundry.
Shell house and powder magazine.
Engine house (mast and gaff).
Shop buildings (roofing).
Coal and wagon sheds.
Ceiling of powder dry houses.
Housings for cable tanks.
Cable tank.
Loading room.
Sub-stations.
Boat house.
Casement.

Installations at:

Olivier, La.
Beacon, Va.
Buffalo, N. Y.
Tompkinsville, S. I., N. Y.
Wood's Hole, Mass.
New York Navy Yard, Brooklyn, N. Y.
Hospital Cay, Guantanamo, Cuba.
Pearl Harbor, Hawaii.
Guantanamo, Cuba.
Randall's Island, N. Y.
New London, Conn.
Picatinny Arsenal, N. J.
Toro Point, Canal Zone, Panama.
Culebra, Canal Zone, Panama.
Naos Island, Isthmus of Panama.

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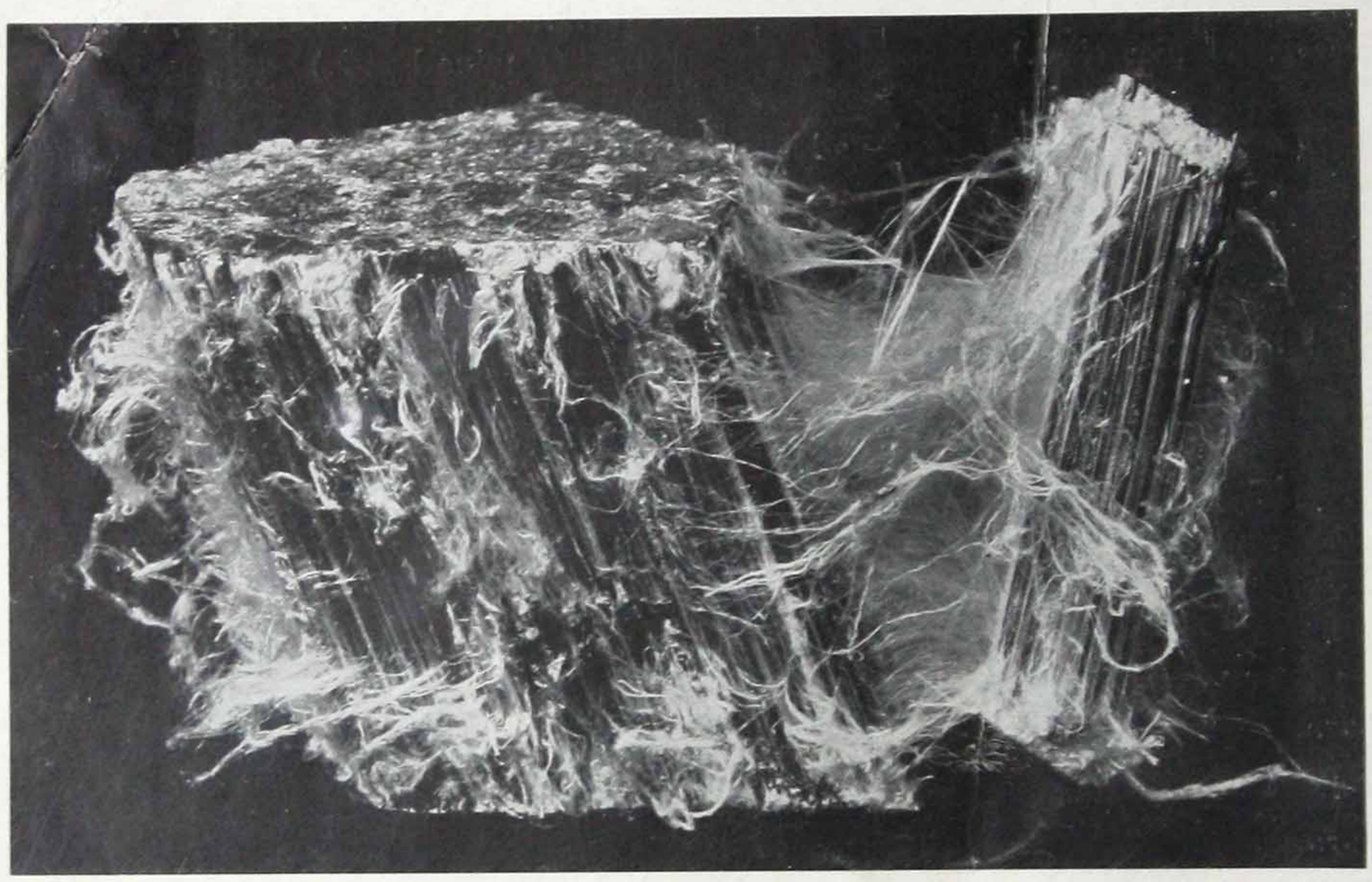

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